What Every Teacher Should Know About GED Math

Basic Information

There are 46 questions on the math test, which students must answer within 115 minutes. Section 1 of the exam is only 5 questions, which students must answer without use of a calculator. For the remaining 41 questions in Section 2, students are allowed to use a calculator. *(Note that the 5 non-calculator questions will be on the quantitative problem solving standards Q 1 and Q2. See below)*

The calculator used for the test is the Texas Instruments TI-30XS. What students have to do with the TI-30XS on the TASC is limited compared to all of its buttons and capabilities. We created this calculator guide for students to help focus on the skills they will need. For students taking the computer-based version of the GED, there is a tutorial they can use to get comfortable using the virtual TI-30XS. This function calculator activity will also help students get more comfortable with the TI-30XS.

On the GED, students are given a reference sheet of mathematical formulas during the test. Teachers should make sure they are using the most up-to-date version with students. The math reference sheet is also available in Spanish.

On the mathematical reasoning section of the GED, there are questions on algebra, functions, geometry, statistics and probability. Most problems are word problems involving real-life situations and contexts, which ask examinees to interpret information in charts, graphs, tables and diagrams.

The math on the GED is broken down into the following content areas:

Mathematical Reasoning on the GED	*TASC math content, for comparison:*
Quantitative Problem Solving (45%) • with Rational Numbers • with Measurement	• *Number & Quantity (13%)* • *Geometry (23%)* • *Statistics & Probability (12%)* • *Algebra (26%)* • *Functions (26%)*
Algebraic Problem Solving (55%) • with Expressions & Equations • with Graphs & Functions	

There is a similar emphasis on algebra & functions compared to the TASC. Algebraic problem solving still makes up more than half of the math content.

One major difference between GED math and TASC math can be found in quantitative problem solving. The TASC only assessed high school level math standards. **The GED assesses high school and middle school standards.** In addition to higher level math, we need to build, deepen, and strengthen our students' understanding of foundational math concepts and skills.

Quantitative Problem Solving with Rational Numbers & Measurement (Number & Quantity, Geometry, Statistics & Probability) - 45%

Quantitative Problem Solving on the GED is divided up into 8 standards (Q1-Q8)

Number & Quantity

- Apply number sense concepts, including multiples, factors, exponents, absolute value, and ordering rational numbers (Q1)
- Add, subtract, multiply, divide, square, find the square root, cube, find the cube root, and use scientific notation with rational numbers (fractions, decimals) (Q2)
- Calculate and use ratios, percents, and scale factors (proportional reasoning) (Q3)

Geometry

- Calculate dimensions, (including use of the Pythagorean Theorem), perimeter, circumference, and area of 2-dimensional figures (Q4)
- Calculate dimensions, surface area, and volume of three-dimensional figures (Q5)

Statistics & Probability

- Interpret and create data displays (Q6)
- Calculate and use mean, median, mode, and weighted average (Q7)
- Utilize counting techniques and determine probabilities (Q8)

What kinds of things should students be able to do in Number & Quantity?

- ☐ Place fractions and decimals in order, including on a number line
- ☐ Find the distance between numbers on the number line
- ☐ Find multiples and factors, including least common multiple, greatest common factor
- ☐ Rewrite numeric expressions using the distributive property
- ☐ Simplify numerical expressions with exponents
- ☐ Compute and solve problems with whole numbers, fractions, and decimals
- ☐ Calculate and compute with squares, square roots, cubes, and cube roots of numbers
- ☐ Find unit rates
- ☐ Use scale factors (for example, convert dimensions between scale drawing and actual objects)
- ☐ Solve multi-step problems using ratios, proportions, and percentages (including percent increase/decrease, commission, simple interest, tips)
- ☐ Use ratio tables
- ☐ Know that expressions with a denominator of zero are *undefined*

Recommended Resources for Number & Quantity

Number & Quantity Teaching Materials on CollectEdNY

NYSED/CUNY Fast Track GRASP Math Packets:

Number Lines and the Coordinate Grid, Part 1: Plotting points on a number line, (including fractions, decimals, and signed numbers), measurement and distance on a number line, and absolute value.

Number Lines and the Coordinate Grid, Part 2: Plotting points and interpreting points on the coordinate grid, drawing lines and shapes on the coordinate grid, and data on the coordinate grid (including scatter plots and correlation).

Being Counted: Probability & Statistics, Part 1: Ratio, percent, scale factors, ratio tables

The Power of Exponents, Part 1: Multiplication (introduction, arrays, area models), factors & multiples, primes & composites, exponents (introduction, connections to area & volume), square roots, cube roots, fractional exponents, negative exponents

The Power of Exponents, Part 2: Place value, powers of ten, powers of two, scientific notation, operations with exponents

Instructional routines for students to develop their number sense:
Number Talks. The basic routine has students do a mental calculation without using paper. Students explain their thinking and teachers create visual representations of that thinking.

Clothesline Math uses interactive number lines to explore fractions, decimals, and percents

What kinds of things should students know how to do in Geometry?

- ☐ Find the area and perimeter of two-dimensional shapes (including composite shapes)
- ☐ Find side lengths of triangles, rectangles, and polygons when given the area and/or perimeter
- ☐ Find the area and circumference of a circle
- ☐ Find the radius or diameter when given the area or circumference of a circle
- ☐ Use the Pythagorean Theorem
- ☐ Find the volume and surface area of three-dimensional shapes
- ☐ Find the side lengths, radius, or diameter of a three-dimensional figure when given the volume or surface area

Note: Several geometry topics that were assessed on the TASC are *not* on the GED These include geometry topics like rigid transformations (rotations, translations, and reflections), angles, and geometric definitions. Teachers should note that though students will not see these topics on the GED, they are found on the TABE 11/12. There are also geometry topics on the GED which were not on the TASC, like area, perimeter, and circumference.

Recommended Resources for Geometry

Geometry Teaching Materials on CollectEdNY

NYSED/CUNY Fast Track GRASP Math Packets:

Two-Dimensional Geometry, Part 1: Two-dimensional shapes, measures and units of length (perimeter and circumference), measures and units of area, geometric formulas, the Pythagorean Theorem, and scale factors

Two-Dimensional Geometry, Part 2: Conceptual understanding of area and population density, especially in Social Studies contexts

Volume & Density of Matter: Conceptual understanding of volume and density, especially in Science contexts, measurement conversion within the metric system

Tools of Algebra: Expressions, Equations, and Inequalities, Part 2: Pythagorean Theorem, volume formulas for geometric figures

What kinds of things should students know how to do in Statistics & Probability?

- ☐ Construct and explain data from bar graphs, circle graphs, dot plots, histograms, box plots, tables, scatter plots, and line graphs
- ☐ Find the mean, median, mode, and range of a number set (including weighted average)
- ☐ Find a missing value when given an average
- ☐ Use counting methods to solve math problems (Example: How many different ways can objects be ordered, arranged, or combined?)
- ☐ Find the probability of one or more events happening

Recommended Resources for Statistics & Probability

Statistics & Probability Teaching Materials on CollectEdNY

NYSED/CUNY Fast Track GRASP Math Packets:

Being Counted: Probability & Statistics Part 1: Ratios, equivalent percentages, decimals, & fractions, experimental probability, relative frequency, theoretical probability, sample space, random samples in population

Being Counted: Probability & Statistics Part 2: Gather data with statistical questions, analyze data with measures of spread & center (mean, median, mode, range), compare data (two-way frequency tables), display data (dot plots, tables, histograms, bar graphs, scatter plots, line graphs), statistics in the world

Algebraic Problem Solving with Expressions & Equations, Graphs and Functions - 55%

55% of Mathematical Reasoning on the GED is algebraic problem solving. The emphasis on algebraic problem solving and the content within algebraic problem solving are very similar to what was on the TASC. The GED summarizes what students should know into the following seven standards:

- ❖ Write, evaluate, and compute with expressions and polynomials (A1)
- ❖ Write, manipulate, and solve linear equations (A2)
- ❖ Write, manipulate, solve, and graph linear inequalities (A3)
- ❖ Write, manipulate, and solve quadratic equations (A4)
- ❖ Connect and interpret graphs and functions (A5)
- ❖ Connect coordinates, lines, and equations (A6)
- ❖ Compare, represent, and evaluate functions (A7)

To help break down these seven standards, here are some things students may be asked to do.

What kinds of things should students know how to do in Functions?

- ☐ Write and interpret functions from a table, a graph, a rule or the description of a situation to represent a context
- ☐ Use linear equations to solve real-world problems
- ☐ Determine slope of a line from a graph, equation, or table
- ☐ Interpret unit rate as the slope of the line in a graph of a proportional relationship
- ☐ Compare different proportional relationships represented in different forms (Example: Compare a relationship represented by a table to another represented by a graph)
- ☐ Compare two linear or quadratic functions represented in different forms (Example: Compare a function represented by a table to another function represented by an equation)
- ☐ Understand elements of a function, including rate of change (slope), starting amount (y-intercept), and the features of the graph and how all of those things appear in tables, rules, graphs, and descriptions of situations
- ☐ Write equations of lines that go through a given point (or two given points)
- ☐ Use slope to identify parallel and perpendicular lines
- ☐ Locate and plot points on the coordinate grid
- ☐ Interpret key features of graphs and tables of linear and non-linear functions
- ☐ Identify a function as having one output for each input

What kinds of things should students know how to do in Algebra?

- ☐ Write linear expressions and equations (linear and quadratic) including word-to-symbol translations and representations of common real-world situations
- ☐ Solve real-world problems using linear equations

- ☐ Solve one-variable linear equations, including equations whose solutions require using the distributive property and collecting like terms
- ☐ Write and solve linear inequalities representing real-world contexts
- ☐ Identify or graph one-variable linear inequalities on a number line
- ☐ Evaluate expressions by substituting integers for unknown quantities
- ☐ Solve systems of equations by graphing or substitution

Recommended Resources (& relevant topics)

Algebraic Problem Solving Teaching Materials on CollectEdNY

NYSED/CUNY Fast Track GRASP Math Packets:

Tools of Algebra: Linear Functions, Part 1: Number & visual patterns, introduction to functions, 4 views of a function (functions in words, tables, graphs, equations), function notation

Tools of Algebra: Linear Functions, Part 2: Rates, rate of change & slope, starting amount & y-intercept, linear functions in our world

Tools of Algebra: Expressions, Equations, and Inequalities, Part 1: Equal sign, creating & solving equations, order of operations, equivalent expressions, distributive property

Tools of Algebra: Expressions, Equations, and Inequalities, Part 2: Variables, like terms, solving equations, solving for variables, scientific & geometric formulas, finding the volume of geometric figures using formulas, inequalities (introduction, solving, evaluating, & graphing)

Tools of Algebra: Nonlinear Functions, Part 1: Three views of quadratic functions (tables, equations, graphs), quadratic growth

Tools of Algebra: Nonlinear Functions, Part 2: Quadratic growth, quadratic functions

Number Lines and the Coordinate Grid, Part 2: Plotting points and interpreting points on the coordinate grid, drawing lines and shapes on the coordinate grid, and data on the coordinate grid (including scatter plots and correlation).

Algebraic Problem Solving HSE Test Practice Questions: This document contains all test practice questions from the Fast Track GRASP Math packets in algebraic problem solving.

The CUNY Math Framework: Problem-Solving in Functions and Algebra

Note: The fact that there are both middle school and high school standards on the GED does not mean we have to teach topics like operations with fractions, decimals and percents before introducing functions or algebra to students. Students cannot wait to learn "the basics" first

and then squeeze in algebra and functions at the end of a semester. Much of the functions and algebra content on the GED can be accessible to students even if they haven't mastered work with fractions and decimals. The suggested resources above offer lesson plans and a scaffolded approach that allows students to develop a conceptual understanding of algebra and functions while learning formal notation and contextualized applications.

Sample Question Stems in Algebraic Problem Solving	Common to these question stems:
• Which data display *[graph or table]* represents...? • Which expression is equivalent to...? • Which expression represents...? • Which algebraic expression shows...? • Which number will make the equation true? • Which point on the graph represents...? • What are the coordinates...? • What is the value of x...?	• An emphasis on comparing a function in one form to a function represented in another form (graphs, tables, equations, in words). • An emphasis on students choosing which function, expression, graph, inequality match a given situation.

Math Skills on the GED Social Studies Test

Students will need the following math skills on the Social Studies section of the GED:

- ☐ Analyze information presented in maps, graphic organizers, tables, and charts
- ☐ Interpret, use, and create graphs (e.g. scatterplot, line, bar, circle)
- ☐ Choose the chart, table, or graph that best represents the information in a given text
- ☐ Use data from graphs, tables, and charts to make reasonable predictions
- ☐ Find the mean, median, mode, and range in Social Studies contexts
- ☐ Represent data on two variables (dependent and independent) on a graph; analyze and communicate how the variables are related
- ☐ Recognize the difference between correlation and causation

The math on the Social Studies test requires students to synthesize information. They have to identify general trends in graphs and charts (not just identify specific data points) and decide what is important and what they can ignore. They also have to recognize when the information they need is in the graph itself and when it requires background knowledge.

Math teachers should integrate these skills into their classes and look for ways to connect the math they are teaching with social studies (and the real world). Math instruction should include graphs and charts in historical contexts. When possible, math teachers should confer with reading/writing teachers to look for opportunities to integrate math into other disciplines, especially through the use of tables, charts, and graphs. For example, if students are learning about the Civil War in their ELA class, math teachers might look at some tables and graphs complementing that work.

This chart of the high-emphasis topics in SS can help math teachers choose relevant content for materials & graphs in a SS context:

Civics & Government *(50%)*	☐ Types of government (modern & historical) ☐ Principles of US constitutional democracy ☐ Structure of US government ☐ Individual rights & responsibilities
US History *(20%)*	☐ Key historical documents in US constitutional govt ☐ Revolutionary War/Early Republic ☐ Civil War & Reconstruction ☐ Civil Rights Movement ☐ European population in the Americas ☐ World War I & II ☐ The Cold War ☐ US foreign policy since 9/11
Economics *(15%)*	☐ Fundamental concepts ☐ Macro & microeconomics ☐ Consumer economics ☐ Causes & impacts of war ☐ Exploration & colonization ☐ Scientific & Industrial Revolutions
Geography *(15%)*	☐ Development of civilizations ☐ Relationship between environment & societal development ☐ Borders between people & nations ☐ Human migration

Suggested Resources

Math & Social Studies Teaching Materials on CollectEdNY

Slow Reveal Graphs: A process for using graphs with students that promotes sense-making. You start with a graph and peel back the layers until you have a numberless graph that every student can make observations about. Then you add back the layers, step by step, encouraging students to make sense of the graph and engage with the story of the graph.

Slow Reveal Maps: Use maps to explore data in historical and geographic contexts. The sequences help students develop (1) statistical literacy, (2) their ability to read data in maps, and (3) background knowledge in US history, especially as it connects to social justice

CUNY Data and Graph Collection: Engaging data sets and ideas on how to use them.

The United States Census - A Math and Social Studies Lesson: In this lesson math and SS are incorporated to understand the importance of the Census. Connections are made to US history, slavery, voting rights, literacy rates, congressional apportionment, branches of government, population growth, and graph-reading skills.

Materials from the NYSED/CUNY Fast Track GRASP Math Packets

- Two-Dimensional Geometry, Part 2: Conceptual understanding of area and population density, especially in Social Studies contexts
- Being Counted: Probability & Statistics, Part 2: Analyzing, comparing, and displaying data, practicing measures of center (mean, median, mode) and range, in the context of education, housing, and wage data

Math Skills on the GED Science Test

Similar to social studies, there is real math content on the science section of the GED. Students will need the following math skills on the Science section of the GED:

- ☐ Interpret scientific results and information in graphs, tables and various scientific diagrams
- ☐ Express scientific information or findings numerically or symbolically
- ☐ Identify proper measurement tools or appropriate units for a scientific experiment
- ☐ Apply scientific formulas
- ☐ Use a sample of data to draw conclusions about a larger set of data
- ☐ Make a prediction based on data or evidence
- ☐ Identify numerical data that supports a finding or conclusion
- ☐ Determine the probability of events
- ☐ Use counting to solve scientific problems
- ☐ Identify and interpret independent and dependent variables in scientific investigations
- ☐ Calculate the mean, median, and mode of a data set

Math instruction needs to incorporate math into scientific contexts and vice versa. As with social studies, math teachers should confer with reading/writing teachers to look for opportunities to integrate math into science, especially through the use of tables, charts, and graphs.

This chart of the high-emphasis topics in science can help math teachers choose relevant content for materials & graphs in a science context:

<table>
<tr><td rowspan="2">Life Science (40%)</td><td rowspan="2">☐ Human body and health
☐ Structure & function of life
☐ Heredity
☐ Evolution
☐ Relationships between life function & energy intake
☐ Ecosystems & energy flows</td><td>Earth & Space Science (20%)</td></tr>
<tr><td>☐ Interactions between Earth's systems & living things
☐ Earth & its system components and interactions
☐ Structure & organization of the cosmos</td></tr>
<tr><td>Physical Science (40%)</td><td colspan="2">☐ Chemical properties & reactions related to human systems
☐ Conservation, transformation, & flow of energy
☐ Work, motion, & forces</td></tr>
</table>

Suggested Resources

Math & Science Teaching Materials on CollectEdNY

Slow Reveal Graphs: A process for using graphs with students that promotes sense-making. You start with a graph and peel back the layers until you have a numberless graph that every student can make observations about. Then you add back the layers, step by step, encouraging students to make sense of the graph and engage with the story of the graph.

CUNY Data and Graph Collection Engaging data sets and how to use them in the classroom.

Materials from the NYSED/CUNY Fast Track GRASP Math Packets

- Tools of Algebra: Expressions, Equations, and Inequalities, Part 2: Using scientific formulas (rate, distance, and time & force, mass, and acceleration)
- Tools of Algebra: Linear Functions, Part 2: Functions in Our World (temperature conversion, the speed of light and the speed of sound, antibodies)
- Volume & Density of Matter: Volume, measurements & the metric system, reading tables and graphs in scientific contexts
- Tools of Algebra: Nonlinear Functions, Part 2: Gravity, acceleration, exponential functions in the world
- The Power of Exponents, Part 2: Scientific notation

Item Types on the GED Math Test

The GED uses a variety of technology-enhanced item types, including:

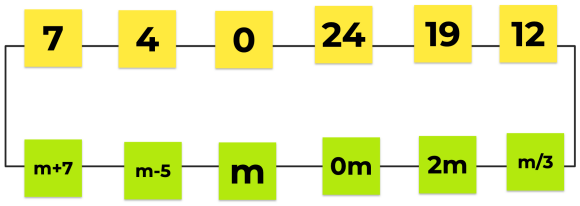
- **multiple choice** items, where students choose one of four answer choices. Multiple choice options do not only ask students to choose between four different numbers. Students may need to compare and choose between four different equations, four different expressions, four different tables, four different graphs, or four different statements.
- **fill-in-the-blank** items where students write in their answer.
- **drop-down** items, where students choose answers from a drop down menu that appears directly in the text, usually in the form of a statement. The drop down menu may include numbers or words. The point is to select the choices from the drop down menus that make the statement true.
- **drag and drop** items allow students to move objects on the screen from one place to another. Drag and drop questions are often used to have students place things in order. For example, given three functions, put them in order of largest to smallest slope.
- **hot spot** items, where students can do things like click on a graph to plot points on coordinate grids, number lines, dot plots, and scatter plots.

TEACHING IMPLICATIONS & SUGGESTIONS

As our students prepare for the GED, they need enough experience with these item types to get comfortable with the technology/computer skills they need. Teacher Desmos is an online platform with free, interactive activities that focus on math concepts that will allow students to practice a lot of the computer functionality they'll have to navigate on the GED.

Cloze-style activities, where students choose from a bank of words and numbers to complete a passage, like the one from Area and Population Density (page 77), or the one from Factors, Multiples, Primes, Composites from The Power of Exponents, Part 2 (page 76) can help with drop-down items.

Card Sorts in DESMOS offer an interactive virtual drag and drop model. Clothesline Math works in person, or virtually (like the Algebra Double Clothesline activity below, made on Jamboard).

1. Arrange the yellow sticky notes so they are in size order. 2. Arrange the green sticky notes so that each one is equivalent to the yellow sticky note above it.	

It is not only the new technology that makes these item types challenging. Preparing for multiple choice questions, where the answer choices include not only numbers, but also items such as graphs, tables, equations, or statements will likely be unfamiliar to many of our students. An instructional routine like Which One Doesn't Belong can help because it involves students looking at four items (numbers, graphs, images, etc.) and making observations about their differences and similarities. Working with students to develop their skills in writing (and evaluating) true statements about graphs/tables/functions can help as well.

Another valuable skill for students to work on in class is their ability to retrieve information they need for a problem from a table. Students will likely have to do this across all the math content in both quantitative and algebraic problem solving, and even on the social studies and science tests (see below).

Multiple questions on the same stimulus

Teachers and students should also be aware that on the GED students will be given a prompt, usually including text and a graph and/or table. Then they will be asked multiple questions about that text/graph/table. The questions are often unrelated to each other and drawing from disparate math content areas.

For example, here is a prompt from the free online GED Math Practice Test:

A scientist is studying red maple tree growth in a state park. She measured the trunk diameters of a sample of trees in the same month every other year. The tables show the data for two of the trees.

Tree 1	
Year	Trunk Diameter (inches)
1	18.6
3	19.2
5	19.8
7	20.4
9	21.0
11	21.6
13	22.2

Tree 2	
Year	Trunk Diameter (inches)
1	11.4
3	12.0
5	12.6
7	13.2
9	13.8
11	14.4
13	15.0

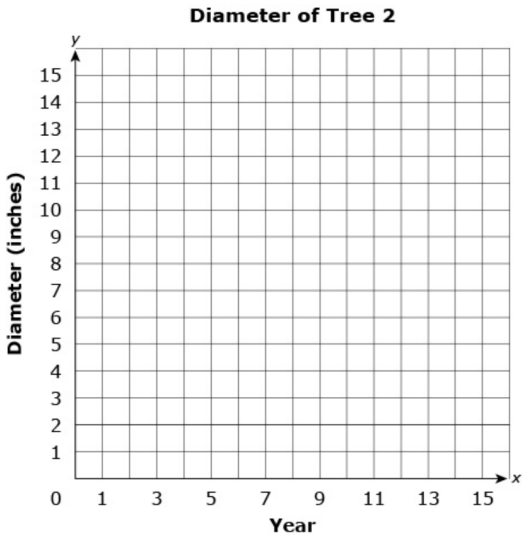
This is the final year in which she will collect data. When her data collection is complete, she will predict future red maple tree growth.

Here are the three questions that go with the prompt from the practice test:

The scientist plots the data for tree 2 on a coordinate grid. She begins by plotting data for year 3 and year 11.

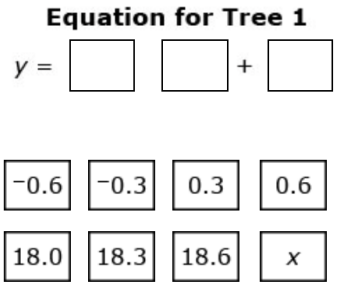
What are the locations of the two points on the coordinate grid?

Hot Spot



The scientist creates an equation that models her data for each tree so that she can predict the diameter in the future. Complete a linear equation that fits the data for tree 1, where *x* is the year and *y* is the trunk diameter, in inches. Click on the variables and number you want to select and drag them into the boxes.

Drag and Drop

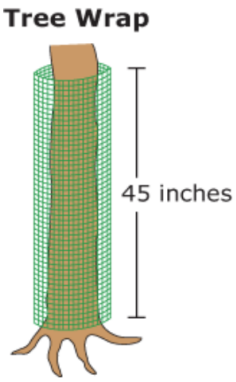


In year 13, the scientist will put tree wrap around tree 1 to protect it from the winter snow. The height of the tree wrap needs to be 45 inches.

The wrap is priced by the square foot. To the nearest square foot, how many square feet of wrap does she need

A. 22
B. 44
C. 121
D. 261

Multiple Choice



For a technology-enhanced version of this problem using Desmos: [Red Maple Tree Growth]

TEACHING IMPLICATIONS

How can we help students think flexibly about the different math content that can come from a single stimulus? One way is to use the instructional routine, Notice/Wonder. Give your students a word problem, situation, graph, table, but remove the question. Ask students, *What do you notice?* and then, *What do you wonder?* (Using Notice Wonder). Another routine is to have students pose their own problems. Ask, *What kinds of math questions can we ask?* and generate a list of questions. The process of brainstorming questions is a worthwhile routine to return to. Then you can focus on one, or give students the choice of which one they want to work on.

It's important to not extrapolate too much from one GED sample item, but here a few things that stood out to us about these three specific questions:

- There are both algebraic and quantitative problem solving questions (APS - plotting points on the coordinate grid, writing a linear function; QPS - geometry, surface area of a cylinder)
- All three require students to retrieve needed information from a data table.
- Drag and Drop allows students to be assessed on their ability to understand and correctly place the different elements of a function (slope/rate of change and starting amount/y-intercept)
- The surface area problem requires students to understand the different parts of the formula for the surface area of a cylinder. The formula is $SA = 2\pi rh + 2\pi r^2$ but from the context we understand that there is no top or bottom to this cylinder.

Since so much of the GED math content is assessed in a real-world context, teachers should look for ways to connect the math content in their classrooms to math in the world. This real world content might draw from a range of materials, including utility bills, graphs and charts from the news, paychecks, scientific diagrams, cookbooks, auto loans, etc. How can we explore the range of mathematical tasks adults encounter in the world?

Additional Resources

Will this be on the test?: Adult Numeracy at TERC blog, exploring GED content and teaching, focused on sample problems, multiple approaches, and student reasoning.

Open Middle: Hundreds of challenging math problems worth solving

Glossary of Key Terms for the Mathematical Reasoning Test: includes both Tier 2 (academic) vocabulary and Tier 3 (Content-specific) vocabulary. *Adapted from GED Assessment Guide for Educators: Mathematical Reasoning, Appendix D*Sources

GED ASSESSMENT GUIDES

- Assessment Guide for Educators: Mathematical Reasoning: Includes Assessment Targets, Item Types & Layouts, Performance Level Descriptors, Comparison between the 2002 GED and the current GED, Glossary of Key Terms for the Mathematical Reasoning Test
- Assessment Guide for Educators: Science
- Assessment Guide for Educators: Social Studies

GED STUDY GUIDES

- GED Math Study Guide
- GED Science Study Guide
- GED Social Studies Study Guide

GED PRACTICE TEST

- Free Online Math Practice Test

ADDITIONAL GED MATH MATERIALS

- Test-Taker Recommendations for Calculator Prohibited Indicators
- GED Test Assessment Target Comparison Table (Indicator Language for Educators 7 Indicator Language Translated for Test-Takers)
- Trends in Students' Knowledge & Skill Gaps - Mathematical Reasoning, Part One (GED Webinar)
- Trends in Students' Knowledge & Skill Gaps - Mathematical Reasoning, Part Two (GED Webinar)